AMENDMENTS TO THE CLAIMS

1. (Previously presented) A broadband cable modem termination system for managing data transmissions through a broadband network that interconnects a plurality of end user locations that are connected to a first side of said network and a head-end via a cable modem that is connected on a second side of said network, said broadband network comprising a hierarchical network having at least two levels, said broadband cable modem termination system comprising:

downstream broadband cable modem component means, located at a first level of said hierarchical network, which is proximate to said second side of said network, comprising:

means for exclusively converting data that is received in digital base-band IP format from a source of program material located at said head-end, to data in a radio frequency based format for transmission to selected ones of said plurality of end user locations,

means for transmitting said data in said radio frequency based format exclusively through said network to selected ones of said plurality of end user locations;

upstream broadband cable modem component means, located at a second level of said hierarchical network which is proximate to said first side of said network and independent of said downstream broadband cable modem component means, comprising:

means for exclusively converting data that is received in a radio frequency based format from selected ones of said plurality of end user locations, to data in digital base-band IP format for transmission to said head-end,

means for transmitting said data in digital base-band IP format exclusively through said network to said head-end; and

wherein said first level and said second level are different levels in said hierarchical network and said means for exclusively converting data from digital base-band IP format to data in a radio frequency based format is at a different location from said means for exclusively converting data from a radio frequency based format to data in digital base-band IP format.

Claims 2 – 5 (Canceled)

6. (Currently amended) A method of operating a broadband cable modem termination system for managing data transmissions through a broadband network that interconnects a plurality of end user locations that are connected to a first side of said network and a head-end via a cable modem that is connected on a second side of said network, said broadband

network comprising a hierarchical network having at least two levels, said method of operating a broadband cable modem termination system comprising:

exclusively converting data that is received in digital base-band IP format from a source of program material located at said head-end, to data in a radio frequency based format for transmission to selected ones of said plurality of end user locations;

transmitting said data in said radio frequency based format exclusively through said network to selected ones of said plurality of end user locations;

exclusively converting data that is received in a radio frequency based format from selected ones of said plurality of end user locations, to data in digital base-band IP format for transmission to said head-end;

transmitting said data in digital base-band IP format exclusively through said network to said head-end; and

wherein said primary hubs and said secondary hubs are located at different levels in said broadband network and said step of exclusively converting data from digital base-band IP format to data in a radio frequency based format occurs at a different location from said step of exclusively converting data from a radio frequency based format to data in digital base-band IP format ~~and said step of exclusively converting data from digital base-band IP format to data in a radio frequency based format occurs at a different location from said step of exclusively converting data from a radio frequency based format to data in digital base-band IP format~~.

Claims 7 – 10 (Canceled)

11. (Previously presented) A broadband cable modem termination system for managing data transmissions through a broadband network that interconnects a head-end that is connected to a plurality of primary hubs of said broadband network, and a plurality of end user locations that are connected to a plurality of secondary hubs of said broadband network, said broadband network interconnecting said primary and said secondary hubs, said broadband cable modem termination system comprising:

primary hub broadband cable modem component means, connected to at least one of said primary hubs, comprising:

means for exclusively converting data that is received in digital base-band IP format from a source of program material located at said head-end to data in a radio frequency based format for transmission to selected ones of said plurality of end user locations,

means for transmitting said data in said radio frequency based format exclusively through said broadband network to selected ones of said plurality of end user locations;

secondary hub broadband cable modem component means, connected to at least one of said secondary hubs and independent of said primary hub broadband cable modem component means, comprising:

means for exclusively converting data that is received in a radio frequency based format from selected ones of said plurality of end user locations to data in digital base-band IP format for transmission to said head-end;

means for transmitting said data in digital base-band IP format exclusively through said network to said head-end; and

wherein said primary hubs and said secondary hubs are located at different levels in said broadband network, and said means for exclusively converting data from digital base-band IP format to data in a radio frequency based format is at a different location from said means for exclusively converting data from a radio frequency based format to data in digital base-band IP format.

12. (Previously presented) The broadband cable modem termination system of claim 11 further comprising:

wherein a plurality of end user locations are served by a passive fiber node which serves to interconnect said plurality of end user locations to a secondary hub, said secondary hub broadband cable modem component means is located in said passive fiber node.

13. (Previously presented) The broadband cable modem termination system of claim 11 wherein said means for exclusively converting data that is received in a radio frequency based format comprises:

means for converting said radio frequency based format data from a DOCSIS IP format to digital base-band IP format data.

14. (Previously presented) The broadband cable modem termination system of claim 11 wherein said means for exclusively converting data that is received in digital base-band IP format comprises:

means for converting said digital base-band IP format data to DOCSIS IP data.

15. (Previously presented) A method for managing data transmissions through a broadband network that interconnects a head-end that is connected to a plurality of primary hubs of said broadband network, and a plurality of end user locations that are connected to a plurality of secondary hubs of said broadband network, said broadband network interconnecting said primary and said secondary hubs, said broadband cable modem termination system comprising:

operating a primary hub broadband cable modem component that is connected to at least one of said primary hubs, comprising:

exclusively converting data that is received in digital base-band IP format from a source of program material located at said head-end to data in a radio frequency based format for transmission to selected ones of said plurality of end user locations;

transmitting said data in said radio frequency based format exclusively through said broadband network to selected ones of said plurality of end user locations;

operating a secondary hub broadband cable modem component that is connected to at least one of said secondary hubs and independent of said primary hub broadband cable modem component, comprising:

exclusively converting data that is received in a radio frequency based format from selected ones of said plurality of end user locations to data in digital base-band IP format for transmission to said head-end;

transmitting said data in digital base-band IP format exclusively through said network to said head-end; and

wherein said primary hubs and said secondary hubs are located at different levels in said broadband network, and said step of exclusively converting data from digital base-band IP format to data in a radio frequency based format occurs at a different location from said step of exclusively converting data from a radio frequency based format to data in digital base-band IP format.

16. (Previously presented) The method for managing data transmissions through a broadband network of claim 15 further comprising:

wherein a plurality of end user locations are served by a passive fiber node which serves to interconnect said plurality of end user locations to a secondary hub, said step of exclusively converting data that is received in a radio frequency based format is executed in said passive fiber node.

17. (Previously presented) The method for managing data transmissions through a broadband network of claim 15 wherein said step of exclusively converting data that is received in a radio frequency based format comprises:

converting said radio frequency based format data from a DOCSIS IP format to digital base-band IP format data.

18. (Previously presented) The method for managing data transmissions through a broadband network of claim 15 wherein said step of exclusively converting data that is received in digital base-band IP format comprises:

converting said digital base-band IP format data to DOCSIS IP data.

19. (Previously presented) The broadband cable modem termination system of claim 1 further comprising:

wherein a plurality of end user locations are served by a passive fiber node which serves to interconnect said plurality of end user locations to a secondary hub, said upstream broadband cable modem component means is located in said passive fiber node.

20. (Previously presented) The broadband cable modem termination system of claim 1 wherein said means for exclusively converting data that is received in a radio frequency based format comprises:

means for converting said radio frequency based format data from a DOCSIS IP format to digital base-band IP format data.

21. (Previously presented) The broadband cable modem termination system of claim 1 wherein said means for exclusively converting data that is received in digital base-band IP format comprises:

means for converting said digital base-band IP format data to DOCSIS IP data.

22. (Previously presented) The method of operating a broadband cable modem termination system claim 6 further comprising:

wherein a plurality of end user locations are served by a passive fiber node which serves to interconnect said plurality of end user locations to a secondary hub, said step of exclusively

converting data that is received in a radio frequency based format is executed in said passive fiber node.

23. (Previously presented) The method of operating a broadband cable modem termination system claim 6 wherein said step of exclusively converting data that is received in a radio frequency based format comprises:

converting said radio frequency based format data from a DOCSIS IP format to digital base-band IP format data.

24. (Previously presented) The method of operating a broadband cable modem termination system claim 6 wherein said step of exclusively converting data that is received in digital base-band IP format comprises:

converting said digital base-band IP format data to DOCSIS IP data.